



OPERATIONS – A Starter Kit

A few basic elements to start operations on your model railroad.

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Target audience -
members who have
heard of, but never
operated their
model railroad

There are many types of operating systems from very simple to highly complex, totally manual to sophisticated computer controlled. The goal of this clinic is to show members a simple way to initiate operations on their home layouts and point them towards the necessary tools to give it a try.

OPERATIONS – A Starter Kit

- Why “operate” your model railroad?
- Train movement vs car forwarding
- Basic materials needed for a car card operating system
- Car Cards
- Waybills
- Miscellaneous Items
- Tips and tricks when operating with car cards
- You Lucky Dogs!
- WARNING

Why “Operate” Your Model Railroad?

- Operations provide an ongoing purpose or use for your model railroad
- Operations can be done on layouts of any size
- Model railroads designed for operations often have a more prototypical design
- Designing a model railroad for operations and operating it can be mentally stimulating
- Operating can be a social event for two or more operators
- Operating is FUN!

Train Movement vs Car Forwarding

TRAIN MOVEMENT

- TT&TO (Time Table & Train Order)
- Track warrants
- ABS
- CTC
- “Mother may I?”

CAR FORWARDING

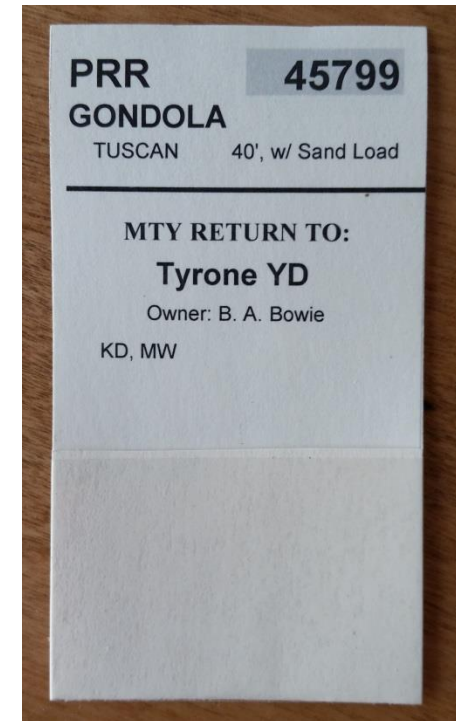
- Tab/sticker on car
- Car Cards
- Ship It
- Rail OP
- JMRI Operations
- Switch Lists

Basic Materials Needed for a Car Card Operating System

- Car cards
 - Shipping tape to make waybill pocket
- Way bills
- Three position boxes (Set Out / Hold / Pickup)

Car Cards

- Typical car cards made from card stock with pocket for waybills
 - Typical HP printer will print on 60# card stock
- Information includes
 - Owning road
 - Often abbreviated
 - Car number
 - Car type
 - AAR designation, or plain English
 - Example: XM, or Boxcar
 - Car color
 - Length

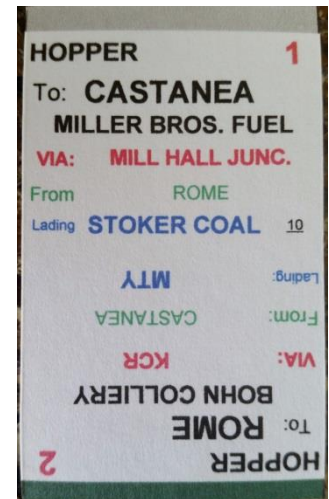


Car Cards

- Other information sometimes included:
 - When Empty Return TO:
 - Owner
 - Miscellaneous
 - Coupler type
 - Metal wheels
- Different color card stock may be used to denote car type
 - Freight, passenger, MOW, Locomotive

Waybills

- Classic waybills include 4 moves, numbered 1-4 (duh!)
- Waybills may also be two moves
 - Example: Move 1 - coal mine to power plant, Move 2 – power plant to coal mine
- Waybills are positioned in car card showing current move number
- Information shown includes:
 - Car Type, 'To' Town, 'To' Industry, Commodity, 'Via' Location, Color for Stripe



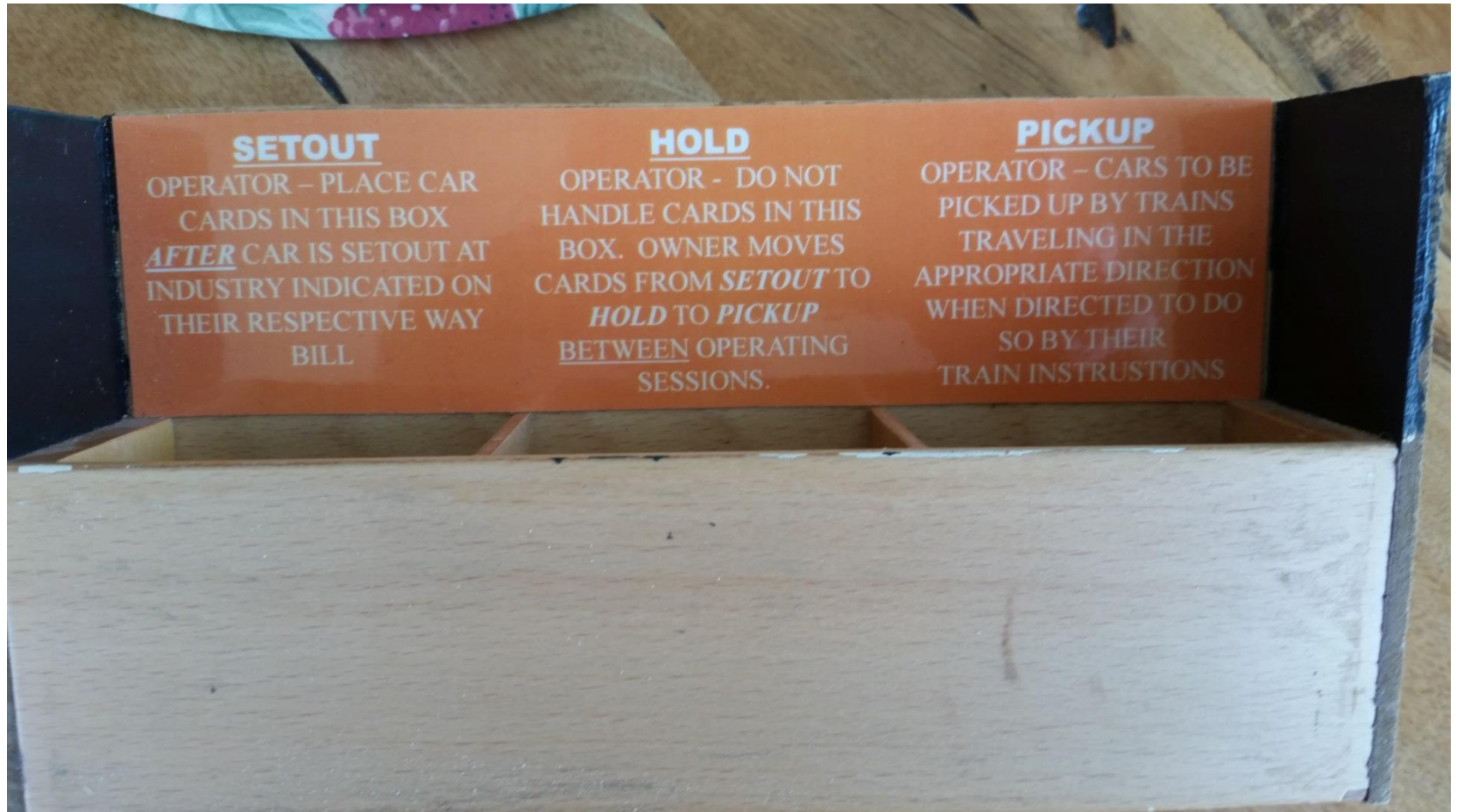
Where Do I Start??

- To determine APPROXIMATELY how many cars you need to operate your railroad:
 - 100% fill each industry spur mixing car types as used by given industry
- Make waybills for each car
 - May be two move or four move (using 2-sided waybills)
 - Consider likely movement from industry to industry on your own railroad
 - Also consider movement to and from industries on your railroad to and from locations “beyond” the extents of your railroad

Where Do I Start??

- Make car cards for each car
- Place waybill in each car with current location showing on top of waybill
- Move 1/3 of cars and respective car cards/waybills from industry spurs to staging and/or marshalling yards
- Change waybill for 1/3 of car cards still at industry to next move and place in PICKUP box
- Final 1/3 of car cards are placed in HOLD box
- Add cars until staging and/or marshalling yards are 50% full
 - Additional cars may be passenger cars and/or cars used to makeup through freight trains
 - Too many cars will clog the railroad

Set Out, Hold, Pickup huh?



Set Out, Hold, Pickup huh?

- SETOUT – Operator places car card w/ waybill in this box after placing car in designated setout location. Waybill not changed at this point.
- HOLD – Operator does not touch these cards.....OWNER moves cards from SETOUT to HOLD between operating sessions
- PICKUP – Operator pickup cars with car cards in this box AND going in the same direction of travel as his train. OWNER moves cards from HOLD to PICKUP after moving waybill to next position: Move 1 to Move 2, Move 2 to Move 3, etc.

Ready, Set, GO!

- With 1/3 cars in yards, 1/3 with car cards in HOLD and 1/3 in PICKUP, you are ready to operate
- Make up a train to move cars from a yard, taking the car cards for each car in the train
- As the train moves across the layout, drop off cars for industries as noted on car cards in your train.
- Pick up cars at industries for cars going same direction as your train
 - Train often have maximum number of cars and if reach, simply continue across layout without picking up more cars and dispatch another train for additional pickups

Where Do I Start??

- Make your own Car Cards using MS-Access (original file by David Husman)
- Make your own Waybills using MS-Excel (original file developed by Wolfgang Dudler, modified for color coded stripe by Bruce Bowie with big assist from Dennis Whitaker and his friend in Colorado, name unknown)
 - Excel must be 2007 or newer to support conditional formatting, used for color coded strip at top of each position
- Files available on Div 4 website
 - Price: FREE!
- Buy car card & waybill “kit” from Micro-Mark

MS-Access Car Card File

The screenshot shows the Microsoft Access interface for a database named "Main Switchboard - Microsoft Access". The ribbon includes "File", "Home", "Create", "External Data", and "Database Tools". The "Database Tools" ribbon is active, showing options like "Filter", "Sort & Filter", "Records", "Find", and "Window".

The main form area displays a "Kettle Creek Railroad" interface. At the top, a grey banner contains the slogan *"DON'T JUST BELONG - PARTICIPATE"*. Below this, the title "Kettle Creek Railroad" is centered. A circular logo for the "MCR DIVISION 4" is shown, with "LORAIN • CUYAHOGA • MEDINA" at the top and "ERIE • HURON" at the bottom. Below the logo is an illustration of a steam locomotive. The text "Built By" is followed by "Owner: B. A. Bowie". At the bottom, it says "Developed By Dave Husman, Omaha, NE May 12, 2004 V3.43".

On the right side of the form, there is a list of options, each with an unchecked checkbox:

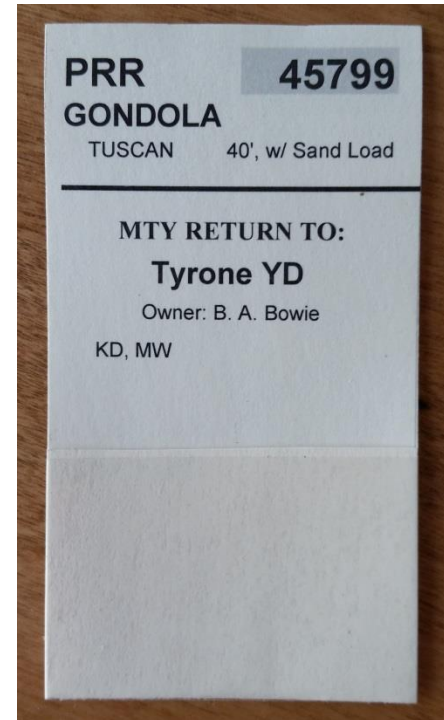
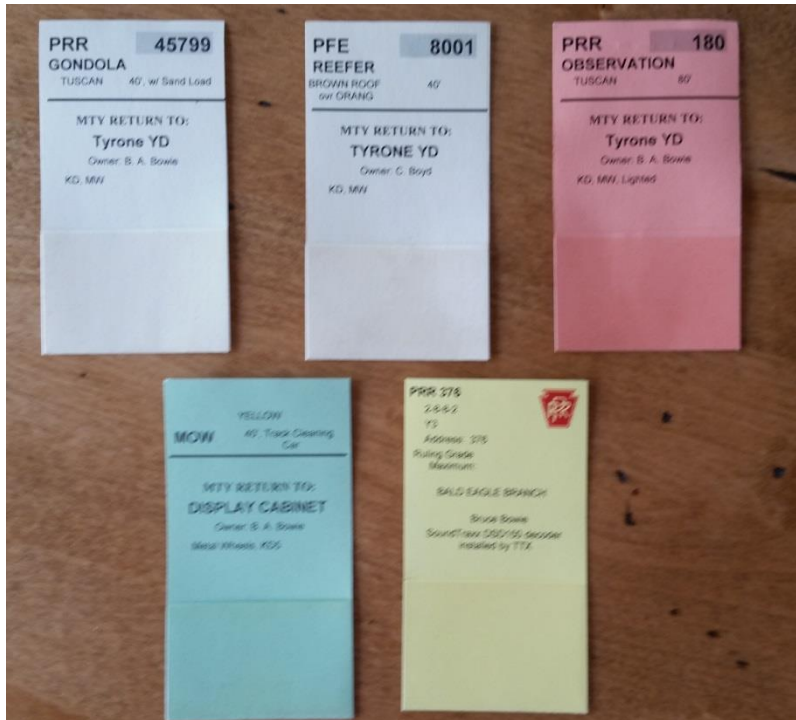
- The Superintendent's Office
- The Roundhouse
- The Car Shop
- The Coach Yard
- The Yard Office
- Exit

A red arrow points from the text below to the "The Superintendent's Office" checkbox.

Click on THE SUPERINTENDENT'S OFFICE then click on QUICK START Print and follow for initial setup

The "Tables" pane on the left lists various tables, including "Paste Errors", "Switchboard Items", and several "tbl4Side" tables. The status bar at the bottom shows "Form View", "Num Lock", and "Filtered".

MS-Access Car Card File



- NOTE: This Access file also supports making waybills. I have not utilized this function and cannot speak to its pros and cons

MS-Excel Waybill File

Waybills w Auto Color Coding - Microsoft Excel non-commercial use

File Home Insert Page Layout Formulas Data Review View QuickBooks

Clipboard Font Alignment Number Styles Cells Editing

S17 BLACK

	A	B	C	D	E	F	G
1	STAGING			TYRONE =	5	LOCK HAVEN =	4
2	Choose files for print (max 12)			BOXCAR	6	GONDOLA	2
3	1	5	9	HOPPER	3	REEFER	0
4	2	6	10	FLATCAR	0	STOCK	0
5	3	7	11	COVERED HOPPER	0	TANK	1
6	4	8	12			TOTAL	12

Reminder: Generate waybills in groups of three; random chance will place them in: SETOUT, HOLD or PICKUP

MOVE 1

	2	3				
9	Nr.	AAR	TO: Location 1			
10	1	BOXCAR	CASTANEA			
11	2	BOXCAR	CASTANEA	CENTURY HOIST	MILL HALL JUNC.	GRAY
12	3	BOXCAR	CASTANEA	CENTURY HOIST	MILL HALL JUNC.	GRAY
13	4	BOXCAR	CASTANEA	CENTURY HOIST	MILL HALL JUNC.	GRAY
14	5	GONDOLA	CASTANEA	CENTURY HOIST	MILL HALL JUNC.	GRAY
15	6	GONDOLA	CASTANEA	CENTURY HOIST	MILL HALL JUNC.	GRAY
16	7	BOXCAR	CASTANEA	LOCK HAVEN CHAIR	MILL HALL JUNC.	GRAY
17	8	BOXCAR	CASTANEA	LOCK HAVEN CHAIR	MILL HALL JUNC.	GRAY
18	9	HOPPER	CASTANEA	MILLER BROS. FUEL	MILL HALL JUNC.	GRAY
19	10	HOPPER	CASTANEA	MILLER BROS. FUEL	MILL HALL JUNC.	GRAY
20	11	HOPPER	CASTANEA	MILLER BROS. FUEL	MILL HALL JUNC.	GRAY
21	12	TANK	CASTANEA	MILLER BROS. FUEL	MILL HALL JUNC.	GRAY

Click on QUICK START tab then print and follow for initial setup

Quick Start waybilldata waybill front 1-12 waybill back 1-12 waybill front BLANK

Ready 84%

A Non-computer Way To Go

- Micro-Mark sells a starter kit for \$33.³⁰
- **#82916 Car Routing System Starter Pack includes:** 100 each car cards, waybills, and bad order slips, 25 locomotive cards, 4 three-compartment bill boxes, plus basic instructions to get your operations started.

NEAT PRINTING
HIGHLY
RECOMMENDED



Tips and Tricks

- Binder clips to hold car cards
- Small flashlight to assist reading car numbers
- Uncoupling pics if not using magnets
- Track schematic w/ town names and direction, E/W
- Apron to hold above



Tips and Tricks

- Card sorting trays
- Yard boxes
 - Color coded magnetic labels
- Multiple industries in a town
- Single box with dividers for SETOUT/HOLD/PICK UP at small town or single industry



You Lucky Dogs!

Division 4 members Bruce Brintnall, MMR and Joe Filipiak are offering to arrange operating sessions for newbies this summer. Both railroads utilize different operating schemes and both provides loads of fun. Contact Bruce and Joe to participate in this opportunity.

WARNING!

The Surgeon General has found the properties making up Operating A Model Railroad to be highly addictive. Operate at your own risk!